

Name: _____

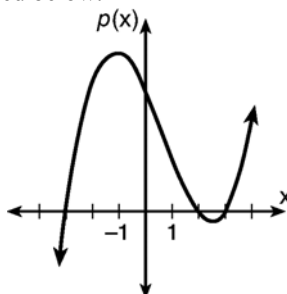
A2 CC1 Q3 Test 2 Review

SHOW ALL WORK ON SEPERATE PAPER! This review is not comprehensive. Be sure to go back and study your notes, homework, and past exams as well.

- 1) Write a polynomial equation (with integral coefficients of lowest degree) which has roots of 3 and a double root of $-\frac{1}{3}$.

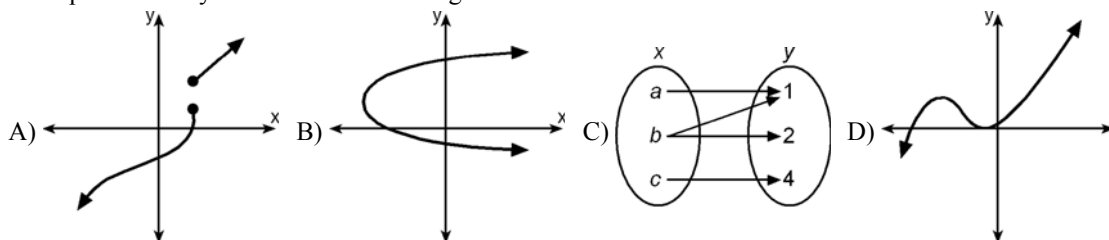
Show all work.**Answer:** _____

- 2) The graph of the function $p(x)$ is sketched below.

Which equation could represent $p(x)$?

- A) $p(x) = x^3 - 2x^2 + 9x + 18$ B) $p(x) = (x^2 + 9)(x - 2)$ C) $p(x) = x^3 + 2x^2 - 9x - 18$ D) $p(x) = (x^2 - 9)(x - 2)$

- 3) Which one of the following diagrams represents a set of ordered pairs where each member of the domain corresponds to only one member of its range?

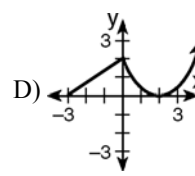
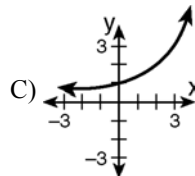
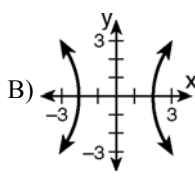
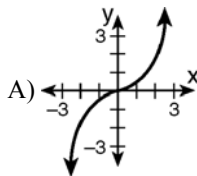


- 4) Which set of ordered pairs does not represent a function?

- A) $\{(3,-2), (-2,3), (4,-1), (-1,4)\}$ B) $\{(3,-2), (4,-3), (5,-4), (6,-5)\}$
 C) $\{(3,-2), (3,-4), (4,-1), (4,-3)\}$ D) $\{(3,-2), (5,-2), (4,-2), (-1,-2)\}$

5e3a9589 - Page 2

- 5) Which one of the following graphs does not represent a function?



- 6) Which one of following is an equation of a function?

A) $x^2 - y^2 = 25$

B) $x^2 + y^2 = 25$

C) $x + y = 25$

D) $x + y^2 = 25$

- 7) Given the set of ordered pairs $R = \{(-2,3), (a,4), (1,9), (0,7)\}$, which replacement for a makes this set a function?

A) 4

B) -2

C) 0

D) 1

- 8) Write a definition for the term "function" and give an example.

- 9) The function $f(x) = \frac{1}{x-3}$ is defined for *all* real numbers except when x equals

A) 3

B) 0

C) $-\frac{1}{3}$

D) -3

- 10) The function $f(x) = \sqrt{x-4}$ is real for what values of x ?

A) $\{x|x > 0\}$

B) $\{x|x \geq 4\}$

C) $\{x|x < 0\}$

D) $\{x|x \leq 4\}$

- 11) The domain of the equation $y = \frac{1}{(x-1)^2}$ is *all* real numbers

A) except 1 and -1

B) except 1

C) greater than 1

D) less than 1

- 12) The domain of the real-valued function $f(x) = \frac{1}{\sqrt{x-3}}$ contains which of the following numbers?

A) -1

B) 7

C) 3

D) 2

Questions 13 through 15 refer to the following:

Find the domain and range of the given function.

13) $k(x) = \sqrt{x+4}$

Show all work.

Domain: _____

Range: _____

5e3a9589 - Page 3

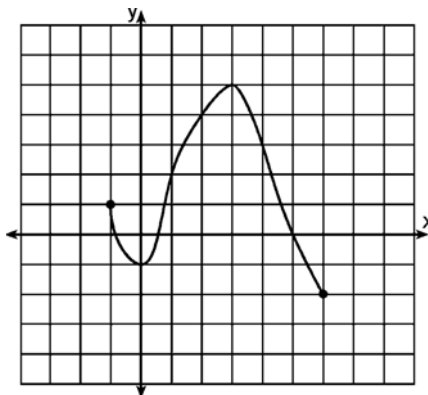
14) $f(x) = \frac{x+2}{x^2-9}$

Show all work.**Domain:** _____**Range:** _____

15) $g(x) = \frac{2}{\sqrt{x-3}}$

Show all work.**Domain:** _____**Range:** _____

- 16) What is the domain of the function shown below?



A) $-1 \leq x \leq 6$

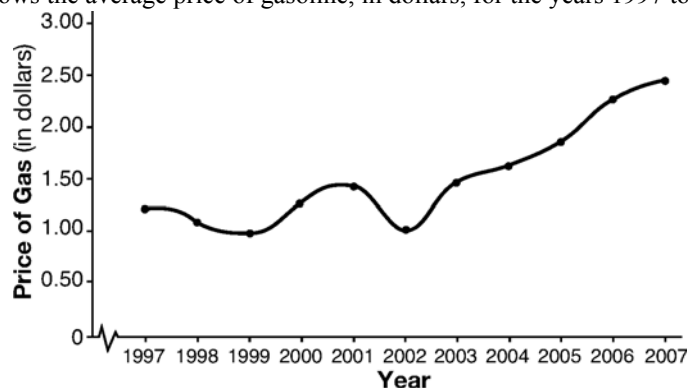
B) $-2 \leq y \leq 5$

C) $-1 \leq y \leq 6$

D) $-2 \leq x \leq 5$

5e3a9589 - Page 4

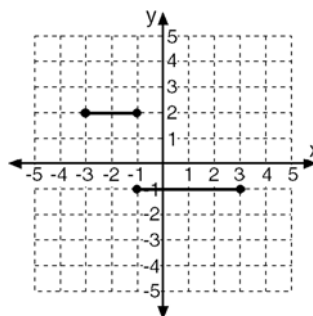
- 17) The graph below shows the average price of gasoline, in dollars, for the years 1997 to 2007.



What is the approximate range of this graph?

- A) $0.97 \leq y \leq 2.38$ B) $1.27 \leq y \leq 2.38$ C) $1999 \leq x \leq 2007$ D) $1997 \leq x \leq 2007$

- 18) For the graph given below:



Part A

State the domain.

Answer: _____

Part B

State the range.

Answer: _____

Part C

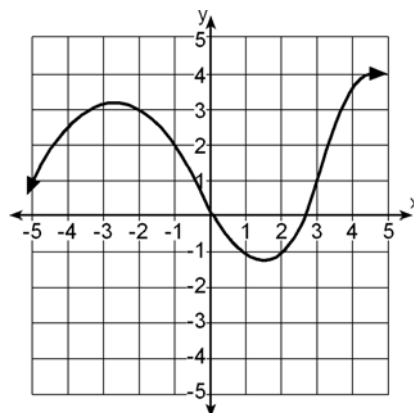
State whether or not the graph represents a function.

Justify your answer.

5e3a9589 - Page 5

Question 19 refers to the following:

Given the graph below of $y = f(x)$.

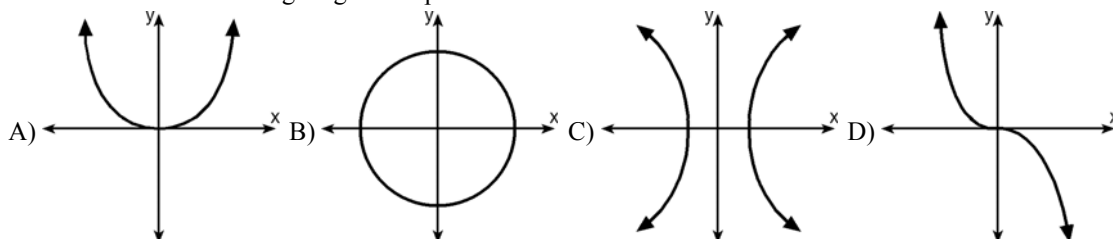


- 19) According to the graph shown, what is the value of $f(-2)$?
- A) 1 B) -1 C) 3 D) -2

-
- 20) Given the function $g(x) = x^2 - 2x + 1$, find the value of $g(1)$.
Show all work.

Answer: _____

- 21) Which one of the following diagrams represents a one-to-one function?



- 22) If $f(x) = \frac{1}{2}x - 3$ and $g(x) = 2x + 5$, what is the value of $(g \circ f)(4)$?
- A) 3.5 B) 6 C) 3 D) -13
- 23) If $f(x) = 3x - 1$ and $g(x) = 4x + 3$, what does $g(f(x))$ equal?
- A) $12x^2 + 13x - 3$ B) $12x + 8$ C) $12x^2 + 5x - 3$ D) $12x - 1$

5e3a9589 - Page 6

- 24) If $g(x) = x + 3$ and $f(x) = x^2 - 2$, find the value of $f(g(3))$.

Show all work.

Answer: _____

- 25) If $f(x) = x^2 - 6$ and $g(x) = 2^x - 1$, determine the value of $(g \circ f)(-3)$.

Show all work.

Answer: _____